



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,565	10/23/2003	Hiroshi Tanaka	67161-124	5966

7590 03/13/2006
McDermott, Will & Emery
600 13th Street, N.W.
Washington, DC 20005-3098

EXAMINER

ALANKO, ANITA KAREN

ART UNIT	PAPER NUMBER
----------	--------------

1765

DATE MAILED: 03/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/690,565

Applicant(s)

TANAKA, HIROSHI

Examiner

Anita K. Alanko

Art Unit

1765

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/25/05 election.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) 8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/23/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Election/Restrictions

Applicant's election of Group I, claims 1-7 in the reply filed on 10/25/05 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite because it is unclear how the body of the claim relates to the preamble. How are heat sources and a substrate holder related to a substrate cleaning device?

The limitation of a "liquid filler provided to fill said gap with liquid" also renders the metes and bounds of the claims unclear because it is unclear if the liquid filler is the cleaning agent (used during operation) or an apparatus limitation. "To fill" is intended use and is given little weight. For the purposes of the rejection, "liquid filler" is considered to be a material that is used while the apparatus is being used, and thus is given little weight. See MPEP 2115.

Claims 2-7 do not cure the indefiniteness of their base claim, and are therefore also rejected.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4 are rejected under 35 U.S.C. 102(e) as being anticipated by Mayer et al (US 2004/0065540 A1).

Mayer discloses a substrate cleaning [0047] device (Fig.9 or Fig.11) comprising:

a plurality of heat sources 832, 838, each used for heating (“multizoned heater” lines 29-36 of paragraph [0082]);

temperature controller (“time varying control of a heater allows dynamic variation of temperatures during the treatment process” last sentence of paragraph [0082]);

substrate holder 806 to hold substrate 808 being separated from said heat sources with a gap 812 (or near backside of substrate 836), and being opposite to said heat sources (see Figure 9 or Figure 11); and

liquid filler 826 (or that liquid 835 at the backside of the substrate 836) provided to fill [0058] said gap with liquid.

As to claim 2, Figures 9 and 11 depict that the heaters are concentric.

As to claim 3, Mayer discloses said substrate is rotated 866.

As to claim 4, Mayer discloses chuck pins [0053].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mayer et al (US 2004/0065540 A1) in view of Hasegawa et al (US 5,677,622).

The discussion of Mayer from above is repeated here.

As to claim 5, Mayer does not disclose what the heater is, and thus does not disclose the specific "Peltier device". Mayer discloses to use conventional means to control the heaters [0069].

Hasegawa teaches a useful way to control the temperature during etching. Hasegawa teaches that a substrate holder 20 may comprise a layer of Peltier elements 40, including Peltier elements 45 in the center area and Peltier elements 47 in an outer area (col.3, lines 47-64). The advantage of using Peltier elements is that it provides for localized temperature control of each region of the wafer 14 (col.3, lines 65-67).

Hasegawa teaches that different chucks may be used such as mechanical chucks (col.4, line 62) – in which case the wafer is separated from the holder by a gap as in the apparatus of Mayer.

It would have been obvious to one with ordinary skill in the art to use Peltier devices in the apparatus of Mayer because Hasegawa teaches that they are useful for providing localized temperature control of each region of the substrate.

Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mayer et al (US 2004/0065540 A1).

The discussion of Mayer from above is repeated here.

As to claim 6-7, Mayer does not disclose the composition of the chuck pins. However, Mayer teaches that a useful composition for use in the cleaning device are resins such as polyvinyl chloride because they can withstand temperature and corrosive conditions of etching operations [0053]. Etching operations include cleaning operations. It would have been obvious to one with ordinary skill in the art that the chuck pins comprise resin such as PVC in the apparatus of Mayer because Mayer teaches that PVC is a useful material in cleaning devices because they can withstand temperature and corrosive conditions of etching operations.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Carmen is cited to show concentric heating elements. Toshima is cited to show a Peltier device. Ohroku is cited to show a chuck pin comprising fluorocarbon resin (col.21, lines 17-20). Shirakawa is cited to show independent control of concentrically arranged heaters.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anita K. Alanko whose telephone number is 571-272-1458. The examiner can normally be reached on Mon-Fri until 2:30 pm (Wed until 11:30).

Art Unit: 1765

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on 571-272-1465. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Anita K. Alanko

Anita K Alanko
Primary Examiner
Art Unit 1765